United States Patent [19]

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[54] **DRIVING RANGE**

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[52] **U.S. Cl.** ..... **273/35 B,** 273/182 R, 273/176 K

[51] **Int. Cl.** **A63b 69/36**

[58] **Field of Search** 273/176, 182, 35

[56] **References Cited**

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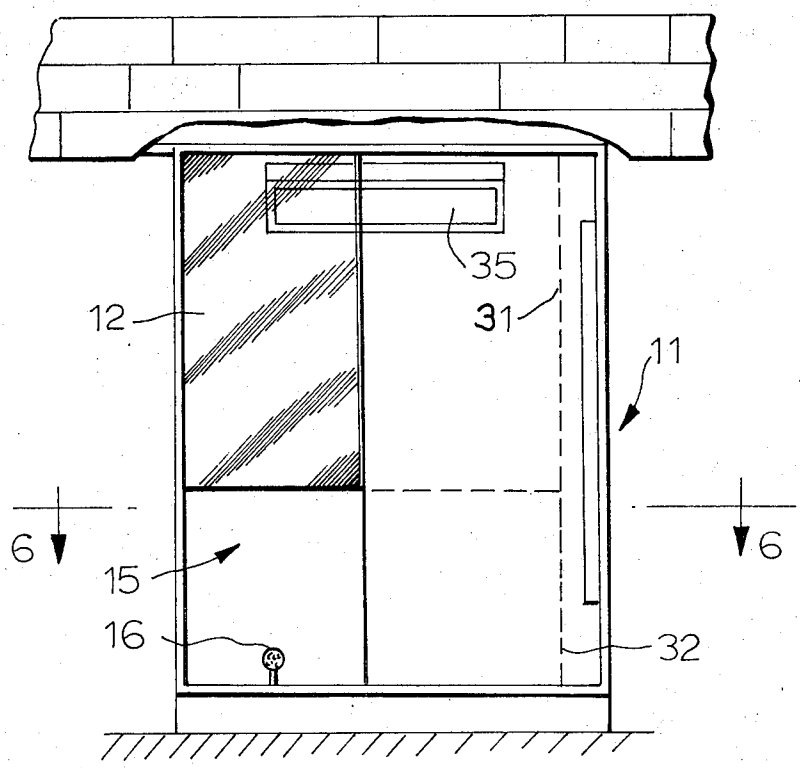
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Attorney, Agent, or Firm—Laurence R. Brown

[57] **ABSTRACT**

A golf driving range is provided that may be used in different weather conditions. Thus, a stall has a front viewing window through which the range can be seen, which can be opened in hot weather or closed in cold weather. A bottom doorway section permits driving the ball when the window is closed. The range has a set of inclined screens forming ball receiving troughs at various specified driving distances from the stall and a conveyer system returns balls. Several stalls are placed as side by side cubicles in a hut which may be left unattended and is thus operable from coin actuated mechanisms for access, heat, balls and conveyer return.

8 Claims, 6 Drawing Figures



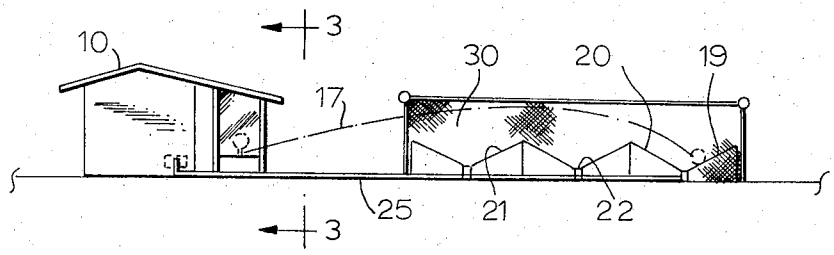


FIG. 1

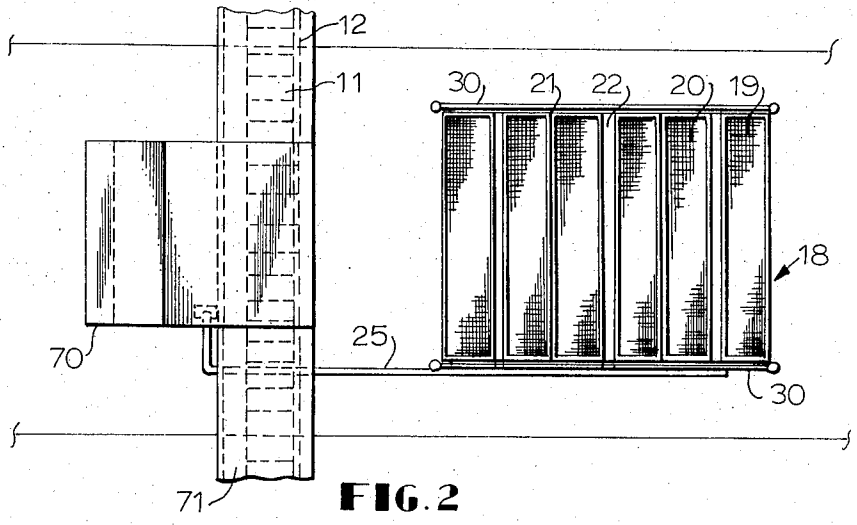


FIG. 2

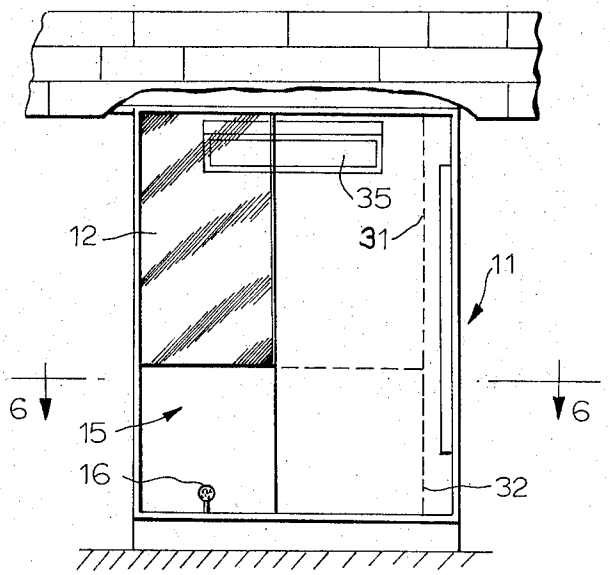
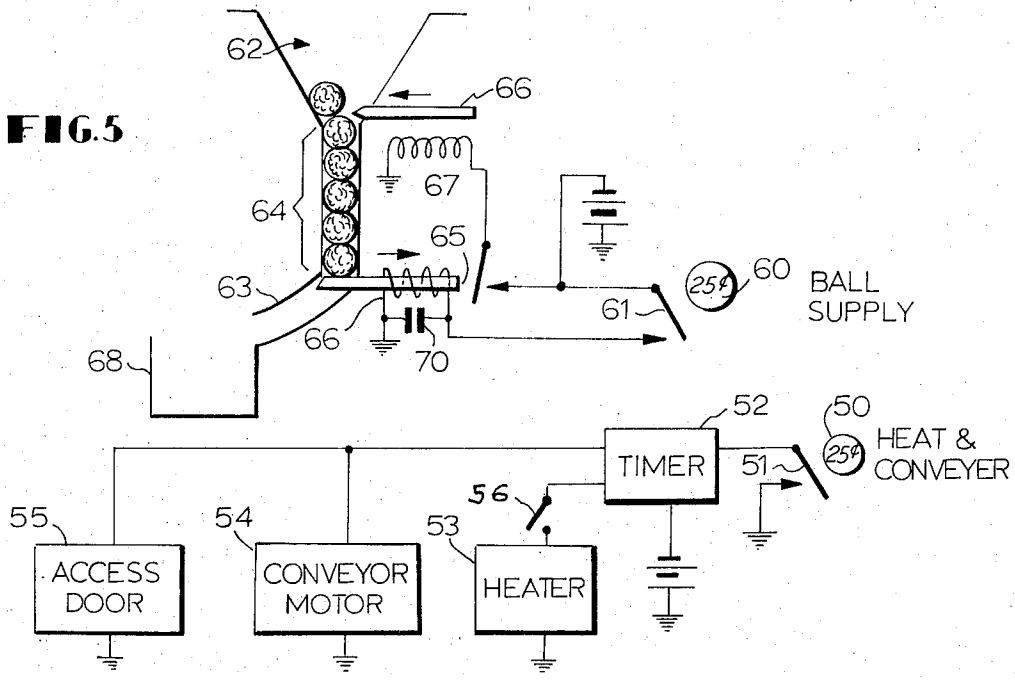


FIG. 3

FIG. 5



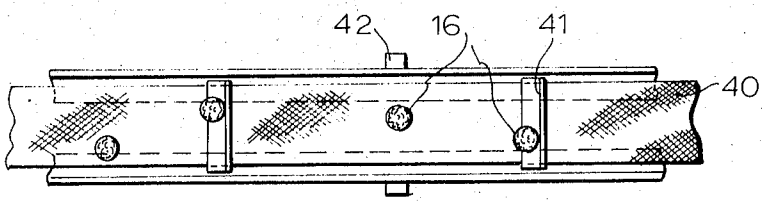


FIG. 4

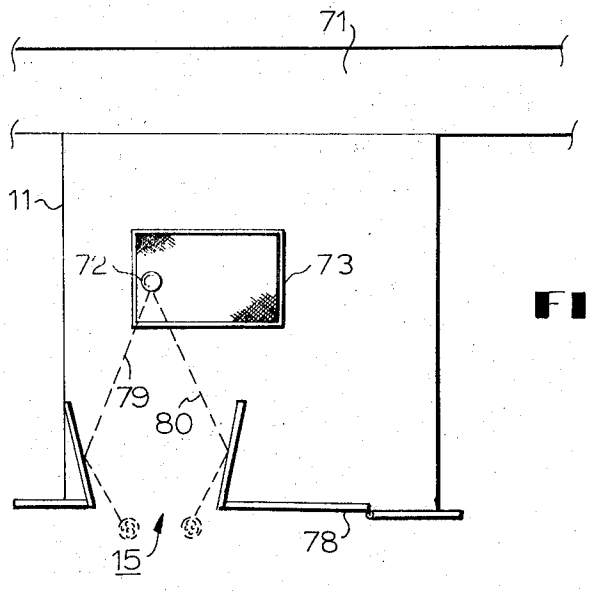


FIG. 6

DRIVING RANGE

This invention relates to golf driving ranges and more particularly it relates to automated golf driving ranges which may be used in cold weather.

In an attempt to winterize golf driving ranges they have been provided with air curtains, for example. However they may produce air currents which interfere with the normal flight and behavior of the ball. Also for access to driving ranges in cold weather, the requirement for one or more attendants may become uneconomical because of lower frequency of use, particularly when coupled with the requirement for retrieving balls.

Accordingly it is the objective of this invention to provide improved year-round driving ranges, which are simple in construction and require little operator attention.

Thus, in accordance with the invention there is provided a driving stall transparent front viewing window which may be selectively opened or closed for winter-summer use, and a range target structure having screens arranged to accumulate and deliver balls to a conveyer type ball return.

Further features, objects and advantages of the invention will be found throughout the following more detailed description which refers to the accompanying drawing, wherein:

FIG. **1** is an elevation sketch of a driving range afforded by this invention;

FIG. **2** is a plan sketch of the driving range;

FIG. **3** is an elevation front view of a hut cubicle taken along lines **3—3** of FIG. **1**;

FIG. **4** is a plan view sketch of a ball conveyer section;

FIG. **5** is a schematic diagram of coin operated features of the range; and

FIG. **6** is a plan view of the stall taken along lines **6—6** of FIG. **3** showing player safety features.

As may be seen from FIGS. **1** to **3**, a hut **10** has a plurality of individual stalls **11**, etc., located in the front portion thereof and each having a transparent front window portion **12** with a lower window opening **15** through which a golf ball **16** may be driven out in a trajectory path **17** which will take it toward a target structural arrangement **18**.

The target has a plurality of screen sections **19, 20,** etc. in the order of ten to 25 yards long, each inclined from horizontal to provide a series of peaks **21** and troughs **22**. The screens are spaced in the troughs **22** enough to permit the accumulation of the balls in conveyer channels which are located in troughs **22** and returned into a conveyer return web **25** by gravity or powered conveyer. On each side of the target screens is a side screen **30** extending high enough to receive any hooks or slices as the ball tends to curve off the target structure.

The hut window has a glass or transparent plastic doorway section of ¾ length that can fold back as suggested by dotted line **31** when the weather is warm thereby leaving a full length open front section with opening **15**. A further closure for opening **15** may be provided as shown at **32**, which is moved out of the way to get access to the driving range by an operator or automatically with a coin controlled mechanism, if desired. For winter use the ¾ door **12** is closed and a radiant heater **35** over the golfer is connected when the stall **11** is in use.

If desired the screens **19**, etc., which receive the balls can have distance markers thereon or impact detectors indicating to the user the length of each drive. The incline facing toward the hut which receives the impact because of the ball flight path is visible and the flight of the ball may be observed to determine the length of the drive without visual aids other than a diagram of the distance to each such inclined screen portion **19**. Thus with a 2½ yard screen width, each 5 yard increment could be indicated over the span of the range, etc.

In order to assure return of all the balls striking the range without clogging, a positive web conveyer drive with a steel net web **40** and angle type conveyer paddles **41** is driven by a motor (not shown) and confines balls **16** between side panels **42**. Preferably for ready access the conveyer is of the open type mounted on crossbars **42** for suitable height and support, but may have covers for keeping out debris.

In operation, the foregoing arrangement can be made partly or completely automatic in operation without attendants by incorporation of some of the features shown in FIG. **5**. Thus, a coin **50** may be used to close switch **51** in a typical coin operated mechanism to actuate a timer switch **52** set for the desired access time to a particular stall **11**. In cold weather the heater **53** may be controlled by closing switch **54** either in the control center or by a further coin operated device. In addition the ball return conveyer motor **54** is actuated, and an access door may be opened such as one covering driving opening **15** in the stall by an appropriate mechanism **55**, for example to give access to the stall for driving over a predetermined time limit set on timer **52**.

Also balls may be supplied by a further mechanism operated by a coin **60** and switch **61**. If the conveyer supplies balls in reservoir **62** which feeds into supply outlet pipes **63** in each stall, a desired number of balls **64** may be selected and released by solenoid operated gates **65** and **66**. Thus a solenoid coil **66** is actuated by switch **61** and when partially opening gate **65** to discharge balls **64** into receptacle **68** operates switch **69** to introduce stop gate **66** into the pipe **63** to await the end of the dispense cycle before gate **65** is reintroduced and gate **66** is withdrawn to meter out another batch of balls **64**. Capacitor **70** or other control means may be used on solenoid **66** to permit all the balls to be dispensed before the cycle ends.

As may be seen in FIG. **2**, a clubhouse section **70** extends into a walkway **71** which permits access into the individual stalls **11**, etc., having a layout as seen from the plan view of FIG. **6**.

The tee **72** is placed on a mat **73** for driving out the opening **15** in a suitable position so that the golfer may view the driving range. Since the tee **72** is preferably a distance back of the front transparent wall **78**, angular protective fenders **75, 76** are provided to guide errant balls through the doorway opening **15** and prevent the possibility of richocheting balls within the stall. Thus paths **79, 80** are typical of those that may occur with an improper driving stroke.

What is claimed is:

1. A year round golf driving range comprising in combination, a clubhouse with attached enclosure containing a walkway providing access into a plurality of individual stalls each having a partially closed transparent front window with a lower doorway opening for egress of a golf ball driven from inside the stall and each adapted to be heated individually, a driving range

provided with a plurality of target areas arranged at different distances from said clubhouse to receive balls driven through said opening by a person inside said stall and a teeing mat positioned within the stall in a position aligned with the opening and the driving range such that a golfer may freely swing a club to impact a ball on the teeing mat and send it out said opening toward said range while the person has unobstructed view out said transparent front window.

2. A driving range as defined in claim **1** wherein said driving range comprises a target structure with a plurality of ball receiving inclined screens arranged to provide a continuous series of peaks and troughs disposed in generally inverted V relationship with inclined faces disposed at visually identifiable specified distances from said stalls to receive balls driven from said stalls.

3. A driving range as defined in claim **2** including means communicating with said troughs to accumulate balls and return them to said clubhouse.

4. A driving range as defined in claim **3** including a motorized conveyer system for moving balls from said target to said clubhouse with control means at said clubhouse for selectively energizing the conveyer system for a predetermined time when a golfer is driving balls.

5. A driving range as defined in claim **2** wherein the target structure has a width in the order of 20 to 100 yards and including a pair of side screens disposed along the ends of said target structure of a height greater than the peaks to intercept balls which may tend to curve outside the target area width.

6. A driving range as defined in claim **1** wherein said stalls include a radiant heat unit positioned at a height sufficient to be above a golfer inside said stalls, and coin operated means for operating said unit a predetermined time.

7. A driving range as defined in claim **1** wherein said front window includes a doorway section which may be folded back to provide an open front in good weather conditions.

8. A driving range as defined in claim **1** wherein angular protective fenders are provided on each side of the doorway opening to guide errant balls through said doorway opening.

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